

CHAPTER 3 METHODOLOGY AND DESIGN

3.1 Research methodology

This chapter will outline the methodology used in this study, which includes type of research, research design, data collection, sampling, data coding and data analysis. The methodology indicates the procedure and techniques used to carry out the study. According to Hagan (1977: 14), methodology points to the philosophy of the research process, which includes the assumptions and values that serve as the rationale for the research, as well as the criteria used for interpreting the data.

3.2 Type of study

Qualitative and quantitative methods were used for the study. The qualitative method was used to describe and probe the relationship between the leadership styles and worker motivation.

Qualitative research was also conducted to confirm and gain insight into the work behaviour of the respondents and how they were affected by the leadership styles employed. According to Royse (1991: 217), researchers who use a qualitative research methodology seek to understand styles and social phenomena at first hand. In so doing, they endeavour to describe subgroups or cultures (e.g. middle management workers) from the point of view of the persons being studied. The researcher was dependent on what she observed and what she was told by the respondents. Bailey (1994: 244) supports qualitative methods, maintaining that the "primary nature of the relationship between the observer and the subjects allows an in-depth study of the whole individual".

In contrast, the quantitative paradigm has a factual basis, measurable data, and involves analytical and mathematical deductions. In carrying out the quantitative method the researcher had to assign numerical values to concepts and items, such as female (1), male (2) for comparison and measurement purposes. The rationale for using qualitative and quantitative methods was to create an interactive process – the quantitative method would help with the assignment of measures i.e. numerical values and the qualitative method would help the researcher to understand how the subjects make sense of their lives and what significance they attach to their workplace.

3.3 Research design

Basic or fundamental research, as opposed to applied research, aims to generate knowledge in particular fields of interest (Sekaran, 1992: 6), rather than to apply the findings to the resolution of a specific problem. The objective of basic research is to obtain a greater understanding of phenomena and problems as they exist in society or in the workplace (Sekaran, 1992: 6). Descriptive and exploratory studies are classified as forms of basic research. The researcher opted for a descriptive study as such studies describe what already exists as accurately and comprehensively as possible (Garbers, 1996:287). This approach is appropriate for this study as it is in line with Hersey and Blanchard's Situational Leadership Model, which explicitly depicts the relationship between leadership styles and worker motivation. In order to gain insight into the phenomena of worker motivation and leadership styles the researcher looked into the consistency that exists between specific leadership styles and motivational factors in the organisation under consideration.

In the qualitative description the researcher employed some of the research procedures stipulated for descriptive and exploratory studies, namely

literature study, informal interview schedule and observation. For the quantitative description, she used frequency tables.

3.3.1 Literature studies

Royse (1991: 221) says that ideally the literature review should be done before the data collection in qualitative research. The purpose of the literature review in this instance is to enable the researcher to look for answers to questions posed by the present study, as well as to compare findings. The researcher undertook the literature study to review theories relevant to the phenomena under investigation and to see what other researchers had done, for example in-depth investigations into Hersey and Blanchard's Situational Leadership Model and how this model integrates leadership styles and motivation theories.

3.3.2 Informal interview schedule

Bailey (1994: 188-189) defines an interview schedule as a data collection method in which one person puts questions to another from a list of topics and/or subtopics within an area of inquiry. In this study unstructured interviews were conducted with employees due to the low response rate in some questions. The rationale for conducting such interviews was to elicit general comments from the respondents on the questions that had generally been left unanswered. This method helped create a holistic picture of how the organisation under consideration (Falke) operates, without adhering to the uniform questions as initially posed in the questionnaire. Bless and Higson-Smith (1995: 106-107) hold that a method of getting people to express their views on a certain issue is the non-scheduled interview, which consists of asking respondents to comment on broadly defined issues. They are free to expand on the topic as they see fit, to focus on particular aspects, and to relate their experiences. The interviewer intervenes only to ask for

clarification or further explanation, but not to give directives or to confront the interviewee with probing questions. Usually no time limit is stipulated for completing an interview. During such interviews the researcher made notes on the responses, which helped in drawing inferences about the general level of motivation of the employees and how they perceived their leaders. The interviews took place on a voluntary and random basis. This technique is closely linked to the researcher's observations as discussed below.

3.3.3 Observation

According to Bailey (1994: 242), observation is the primary technique for collecting data on non-verbal behaviour. He identifies the following advantages of observation:

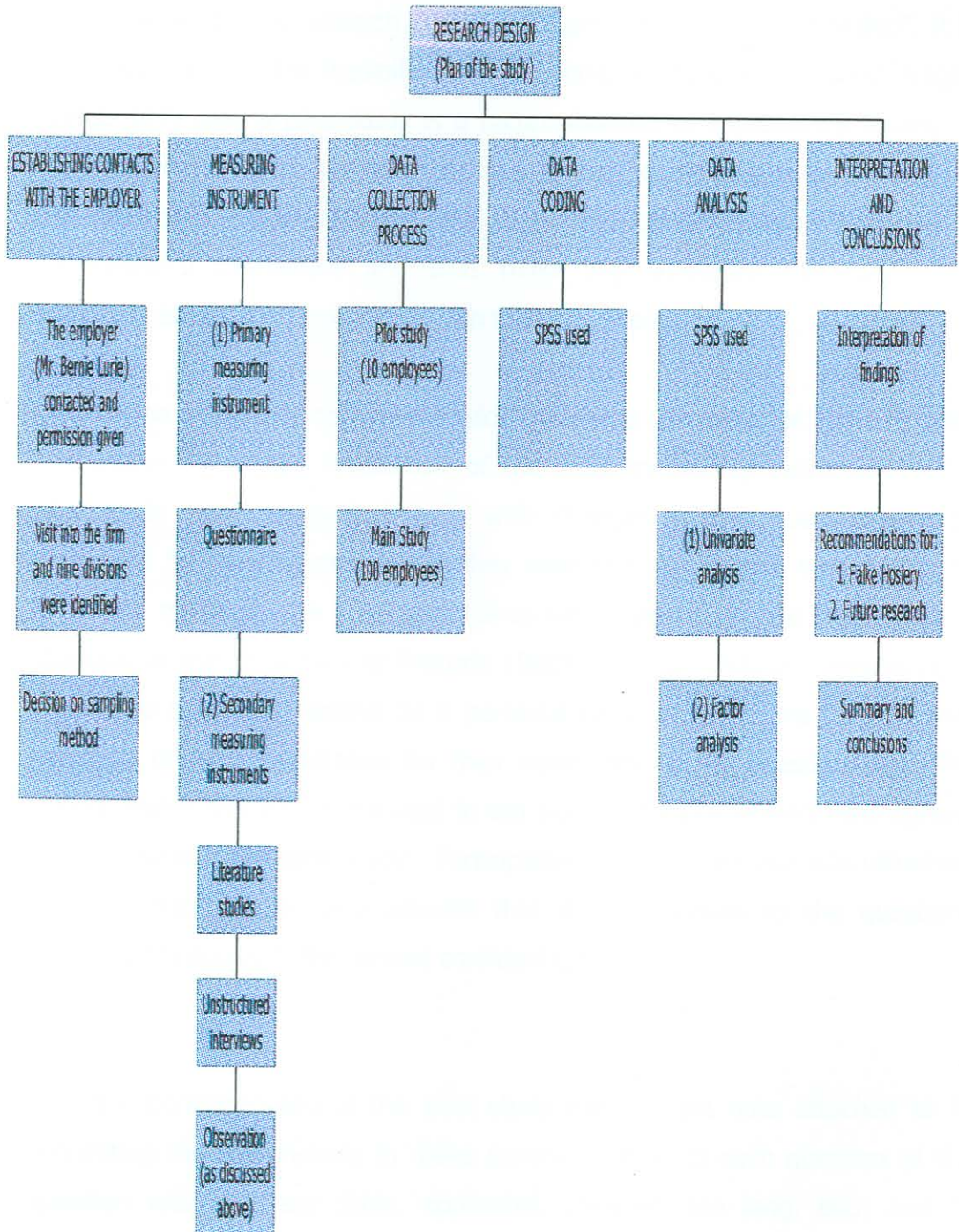
The observer can discern ongoing behaviour in respondents as it occurs, as well as make field notes that record the salient features of the behaviour.

Behaviour takes place in a natural environment and is thus less likely to be manipulated than other data collection techniques, such as interviewing and experimentation. During the data collection process the researcher in this particular study was taken through the different sections of the company, such as the dye house. During these visits the researcher observed the work behaviour of the respondents. Questions like "How long have you been working in this section", "How do you find the work" were asked. Verbal as well as non-verbal responses were noted and they were instrumental in understanding the phenomena under investigation.

The researcher formulated the following research design to clarify the direction of the study. Mouton (1996: 108) maintains that "the rationale for a research design is to plan and structure a research project in such a way that

eventually validity of the findings is maximised through either minimising or, where possible, eliminating potential error”.

Figure 16: Research design for the study



3.4 Data collection

3.4.1 Pilot study

According to Strydom (1998) quoted in de Vos (1998:179), "a pilot study is a process whereby the research design for a prospective survey is tested". It is the process where the feasibility of the planned study is investigated. Hagan (1992: 147) says a pilot study is a reconnaissance or explanatory testing of the instrument, using subjects who are similar to the group to be studied. The rationale for undertaking a pilot study is to identify possible problems in the research instrument and thus make the necessary corrections and adjustments before commencing with the actual research.

Prior to the main data collection a pilot study was conducted at Falke Hosiery two weeks before the finalisation of the main measuring instrument. The pilot study was intended to help with changes to the questionnaire as suggested by the respondents, as they were the people who would have to fill in the questionnaire. Questionnaires were handed to two postgraduate students at the University of Pretoria (Department of Industrial Psychology) whom the researcher knows on a personal basis and who are familiar with the topic under consideration for their comments on the questionnaire. The questionnaire was also distributed to ten people in Falke Hosiery who agreed to participate in the pilot study. Participation in the pilot study was voluntary and the respondents were assured that their responses to the questions would be treated with the utmost confidentiality.

The questionnaire used in the pilot study had a short note attached to it, requesting the respondents to make comments next to each question (if the question was understandable, applicable, relevant, too long, etc.) and to suggest changes. The respondents were also asked to give reasons for their

proposed changes and to add anything they felt was necessary. They indicated the following difficulties:

- *The way some questions were formulated.*
- *Syntax or grammar problems.*
- *Inappropriate questions.*
- *Unclear questions.*

They also offered suggestions and gave reasons for the proposed modification of certain questions. This information was used to make changes to the actual questionnaire. Once the trial questionnaires had been completed the researcher collected them personally. Data were gathered over one week.

3.4.2 Measuring instrument

Primary data were collected by means of a questionnaire. The researcher opted for this measuring instrument because of the overall advantages of questionnaires as given by Weiers (1988).

Weiers (1988: 227-299) indicates specific benefits and limitations of questionnaires.

3.4.2.1 Benefits

- Cost per questionnaire is relatively low.
- Questionnaires can be given good geographical exposure.
- Analysing questionnaires is relatively simple because of the structured information in the questionnaire and few open questions.
- Questionnaires give respondents sufficient time to formulate accurate responses.

3.4.2.2 Limitations

- The negative reaction of the public to questionnaires.
- Use of questionnaires is limited to literate respondents.
- No control over who completes the questionnaire as well as the validity of the information.
- Time consuming due to the time taken to construct a questionnaire and the response time of respondents.

The research instrument (questionnaire) consisted of an introductory part followed by two sections. The introductory part supplied the respondents with information about the questionnaire and instructions on the completion of the questionnaire.

The first section of the questionnaire was aimed at eliciting biographical information such as age, sex, marital status, highest academic qualification, home language and occupation. These questions were included because the researcher wanted to know the type of sample she was working with. Demographic characteristics were also useful for comparison, for instance analysing the responses given by respondents of different age groups.

The second section of the questionnaire consisted of closed questions, which the researcher used for the reasons given by Neuman (1996: 214):

- They are easier and quicker for respondents to answer.
- The answers of different respondents are easier to compare.
- Answers are easier to code and analyse statistically.
- The response choices clarify the meaning of questions for respondents.
- Respondents are more likely to answer sensitive questions.
- There are fewer irrelevant or confused answers to questions.
- Replication is easier.

This section consisted of statements, which were measured on a 7-point semantic differential scale with two extremes, namely strongly disagree and strongly agree.

The scale looked as follows:

Strongly disagree

1	2	3	4	5	6	7
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Strongly agree

This scale was central to the study as the results from a semantic differential tell a researcher how one person perceives different concepts or how different people view the same concept (Neuman, 1997: 165). The questions included in the questionnaire were derived from the principal theory of this study (Hersey and Blanchard's Situational Leadership Model) and the questionnaire intended to measure the type of leadership styles at Falke Hosiery and the level of worker motivation.

In response to the problems encountered by participants in the pilot study, the researcher in conjunction with the study leader made some changes to the questionnaire for the main study. (The questionnaire appears as Appendix A.) After the finalisation of the questionnaire, the employees were told about the research and its purpose. They were informed that not all of them would participate in the research due to time constraints and the sampling procedure to be used. A list of employees and supervisors was obtained and the subjects selected (see Sampling) for the final sample were given the questionnaire. They were allowed to keep it and complete it in their own time, but the return date was stipulated. On completion the questionnaires had to be submitted to the chief supervisor. The researcher collected the completed questionnaires from the chief supervisor.

3.4.3 Sampling

The general idea behind sampling is to obtain information on a small number of individuals who can be generalised to the larger aggregate from whom the sample was drawn.

Population description: A target population consists of all the elements or units about whom survey information is collected. These elements are usually individual persons (Dooley, 1990: 140-141). To draw a sample it is necessary to select a specific population and identify population parameters to obtain a benchmark population. The population for this study was all the permanent employees at Falke Hosiery (Rosslyn). The respondents were selected from the operating and the office units (supervisors). This offered the distinct advantage of extending the number of comparisons and information that could be acquired from these two units.

Sampling method: Two different sampling methods can be distinguished, namely probability and non-probability sampling (Bailey, 1994: 93). In the first instance, the probability of selection of each respondent is known (the universe boundaries are known). In non-probability sampling, the probability of selection is not known (universe boundaries are not known). A proportionately stratified sample was drawn from the target population. According to Bless and Higson-Smith (1995:91) the principle of stratified sampling is to divide a population into different groups, called strata, so that each element of the population belongs to one and only one stratum. This guarantees representativeness or fixes the proportion of different strata within a sample.

A list of all employees in accordance with their respective sections was obtained from the Human Resources Division of the company. Nine sections were identified: knitting, auto assembly, manual, quality department, greige store, dye house, courtesy (ironing), packing and dispatch (distribution). The

sections were used as strata for the study. The total number of respondents for each stratum was obtained – the total number of employees was 195 (see table below). A simple random sample was then selected from each stratum. Numbers were assigned to the names obtained for each stratum (section) and then randomly selected by the researcher. The intended sample size for the study was 100 respondents who had to be selected from the total population (195 employees).

To obtain a proportionate sample, the sampling fraction in each stratum was made equal to the sampling fraction for the population as a whole. In this study a total sample size $n = 100$ was decided on because the size was considered to be manageable, and with the total population of Falke Hosiery being 195. It follows that the sampling fraction in each stratum would then be $195/100 = 1,95$ (2) and this indicated the total number of respondents to be selected from each stratum, The values with decimals were rounded off, as illustrated in the table below.

Table 3: Sampling in the study

SECTIONS	(N) IN STRATUM	NO. OF SELECTED PEOPLE
Knitting	9	5
Auto assembly	40	20
Manual	20	10
Quality department	9	5
Greige store	13	7
Dye house	10	5
Courtesy	17	9
Warehouse	45	23
Dispatch	32	16
Total	195	100

3.4.4 Data coding

Data coding means systematically reorganising raw data into a format that is read by the computer. The researcher developed a coding list with certain numbers assigned to variable attributes, for instance coding the variable of gender (1) as male and (2) as female. Such codes were punched into the computer. Neuman (1997: 295) stresses the importance of accuracy when coding data. Errors made when coding or entering data into the computer threaten the validity of measures and cause misleading results. To ensure the accuracy of the data entered, the researcher employed the possible coding cleaning technique (or wild code checking), which involves checking all variable categories for impossible codes. The researcher went through the whole data set to check for such errors.

3.4.5 Data analysis

According to Denzin (1990: 31), in the social sciences nothing speaks for itself and so all data must be interpreted. Confronted with numerous impressions, documents and field notes, the researcher had to try to make sense of all the data gathered. Accordingly, the following techniques were used for the data analysis:

- **Qualitative analysis**

As mentioned earlier, unstructured interviews and observations were concurrently used with the main measuring instrument, the questionnaire. Inferences were drawn through simple observation, for example how the employees interacted with each other when they were working. Such observations helped the researcher to link the observed behaviour with data obtained from the questionnaire. The researcher also made inferences based on the unstructured interviews where the employees were given the

opportunity to express their views freely on the topic under investigation. The qualitative analysis will be expanded on in the Findings chapter.

Bless and Higson-Smith (1995: 107) believe non-scheduled interviews are very useful in exploratory and descriptive research where the research questions cannot be narrowly defined. It is also an excellent technique when no comparison is sought between the responses of different participants, but when each participant is considered a specific case. The descriptive nature of the present study called for these qualitative measures and helped the researcher gain more insight into how the employees felt about their work and how they perceived the leadership styles used by their superiors.

- **Quantitative analysis**

Frequency distribution, means and standard deviations were used to describe the characteristics of the respondents, their perceptions, attitudes and needs. In other words, univariate analysis was done mainly on the biographical information of the respondents. These statistics are presented in graphic form in Chapter 4.

Most of the questions in this study were at a measurement scale termed interval. According to Leedy (1997: 33), an interval scale is a scale that measures in terms of equal intervals or degrees of difference but whose zero point, or beginning point, is arbitrarily established. The questionnaire consisted of a seven-point scale, in terms of which the respondent had to indicate a degree of agreement or disagreement with a series of given statements.

Factor analysis was firstly done on motivational factors because of the data reduction capability of this kind of analysis. The motivational factors were grouped according to the factor loading and nine factors were derived from

the loading: working conditions, pay and security, relationship with supervisors, employees' interpersonal relations, achievement, recognition, responsibility, work itself and personal growth. Factor loading reflected the qualitative relationships. The further the factor loading is from zero, the more one can generalise from that factor to the variable (Gorsuch, 1974: 2). The researcher had to relate the nine motivational factors derived from the factor analysis to the perceptions of the leadership styles in the organisation under investigation. The consistency or the inconsistency of certain leadership styles had to be established in eliciting certain motivational factors as given by Hersey and Blanchard.

4.2 Biographical information

4.2.1 Age of respondents

The research results indicate that the majority (53%) of the respondents was between 21 and 30 years of age at the time of the study. Twenty-five employees who form 37% of the sample fell in the category 31-40 years.